

# BMJ Open Impact of advanced autonomous non-medical practitioners in emergency care: protocol for a scoping study

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## ABSTRACT

**Introduction:** Emergency care services are looking for new models of care delivery to deal with changing patient demographics and increased pressures. It has been suggested that advanced non-medical practitioners might be valuable for delivering such new models of care. However, it is not clear what the impact of the deployment of advanced non-medical practitioners in emergency care is. This scoping study addresses the following research question: What is known from the literature about the different types of impact of the deployment of advanced (autonomous) non-medical practitioners in emergency care?

**Methods and analysis:** A scoping study will be undertaken to examine and map the impact of the deployment of advanced non-medical practitioners in emergency care. The scoping study follows the methodology proposed by Arksey and O'Malley. Searches will be carried out on databases of peer-reviewed literature and other sources to systematically identify and characterise the literature. Papers will be screened using a 2-stage process to identify the most relevant literature. Papers will be screened by title and abstract, followed by full-text review. Data abstraction and synthesis will be performed using a narrative thematic analysis.

**Ethics and dissemination:** We will communicate the findings to Health Education England, NHS Improvement and the Royal College of Emergency Medicine through existing links provided by members of the project team. We anticipate that the findings will also be of interest to other similar organisations internationally. By identifying gaps in the research literature, we anticipate that the study will generate recommendations for informing future high-quality research studies about the impact of advanced non-medical practitioners in emergency care as well as in other settings. The research findings will be submitted for publication to relevant peer-reviewed journals as well as professional magazines. The scoping study uses only previously published material, and does not require ethical review.

## Strengths and limitations of this study

- The protocol describes a systematic strategy to identify and to map the literature in order to inform the current debate about advanced non-medical practitioners in emergency care.
- The scoping study methodology allows for the consideration of a wide range of study designs.
- Scoping studies typically do not assess the quality of the evidence identified from the literature.
- The research team is multidisciplinary with expertise and experience in emergency care, advanced non-medical practice, leadership, clinical systems improvement, systematic reviewing and qualitative research.

## INTRODUCTION

The National Health Service (NHS) 5-year forward view set out new models of care in order to provide high-quality services to patients amid significant demographic change and economic pressures.<sup>1</sup> Of the 1.3m staff employed within the NHS, only around 130 000 are doctors.<sup>2</sup> Therefore, advanced roles for non-medical practitioners from all backgrounds, such as nurses, paramedics, sonographers, radiographers and pharmacists, might be important in delivering these new models of care.<sup>2–3</sup> This is particularly relevant for emergency care, where there is a recognised shortage of doctors.<sup>4–5</sup>

In the NHS, various enhanced roles already exist, which give greater responsibility to non-medical practitioners, such as emergency nurse practitioners, physician associates and advanced clinical practitioners (ACP).<sup>6–7</sup> The definitions and the remit of these different roles are not always clear.<sup>2–3</sup> However, a defining feature

specifically of ACPs is the extent of their autonomy that allows them to practice at an advanced level within the limits set by their own competence, rather than within a predefined role-specific limit.<sup>3 8</sup> Health Education England have defined ACPs as ‘a registered practitioner with an expert knowledge base, complex decision-making skills and clinical competencies for expanded autonomous scope of practice, the characteristics of which are shaped by the context in which the individual practices. Demonstrable at Masters level and meets the education, training and CPD (Continuing Professional Development) requirements for Advanced Clinical Practice as identified within the framework’.<sup>3</sup> A recent report by the Nuffield Trust makes the following distinction between extended and advanced roles: extended roles are ‘roles where registered professionals take on tasks not traditionally within their scope of practice but which do not require training to Master’s degree level. Advanced roles meanwhile refer to those roles that require registered professionals to undertake additional training at Master’s level or above’.<sup>2</sup>

Drivers for the deployment of advanced (autonomous) non-medical practitioners, such as ACPs in the NHS, include staff shortages, the transformation of services, including community-based services, the delivery of better experience of care, the development of 7-day services, the establishment of a culture of continuous education and learning and the development of role models for education and training.<sup>2 3 9</sup>

While there is some evidence about the positive impact of the deployment of extended roles in emergency care,<sup>2 4 10</sup> it is not clear what the impact of the deployment of advanced non-medical practitioners in this domain is. An early evaluation of the ACP role across different domains based on surveys of eight NHS organisations suggested that there was anecdotal evidence of potential benefits such as reduced length of stay, improved patient care, reduced costs, more efficient services and improved patient and staff satisfaction.<sup>9</sup> However, the authors note that the respondents to their survey did not have data to support these claims. This justifies a scoping study that looks at the impact of advanced (autonomous) non-medical practitioners in emergency care in a broad way including evidence about, for example: the impact on patient safety, hospital admissions rates, patient satisfaction, staff satisfaction, organisational culture and cost. The scoping study aims to identify gaps in the literature, which can inform future high-quality evaluation studies in order to provide a sound evidence base to underpin this emerging role. The findings might also support the increasing number of organisations that currently consider introducing advanced practitioner roles to address workforce issues. The paper describes the protocol for this scoping study, and makes use of the relevant reporting items suggested in PRISMA-P<sup>11</sup> in as far as they are appropriate for scoping studies.

## METHODS AND ANALYSIS

A scoping study will be undertaken to examine the literature on the impact of the deployment of advanced non-medical practitioners in emergency care. Scoping studies are a systematic approach for mapping the key concepts and types of evidence in an area of research, and for identifying gaps in the existing body of knowledge in the area.<sup>12 13</sup> Scoping studies are particularly useful to address questions relating to areas that have not yet been comprehensively reviewed, and where there is emerging evidence that comes from a broader range of study designs.<sup>13 14</sup> Scoping studies generally do not include quality assessment of the studies that were included as relevant.<sup>14</sup>

The methodology for scoping studies proposed by Arksey and O’Malley will be followed,<sup>15</sup> taking into account the refinements proposed by Levac and colleagues.<sup>13</sup> This methodology has been successfully adopted across an increasing number of scoping studies.<sup>12</sup> The methodology consists of five steps: (1) identifying the research question; (2) identifying the relevant literature; (3) study selection; (4) charting the data; and (5) collating, summarising and reporting the results. We anticipate this scoping study to run from October 2016 to March 2017.

### Stage 1: identification of the research question

Scoping studies typically address a broad research question because their aim is to provide a good initial overview of the breadth of evidence available.<sup>13</sup> The clear identification of the research question informs the development of an appropriate search strategy for such purposes.<sup>15</sup> In order to maintain some focus while addressing a broad research question, it has been suggested to articulate the purpose and the scope of the scoping study in terms of population, concept and context.<sup>14</sup>

The research question originated from the clinical practice and the professional involvement in the development and delivery of local and national advanced clinical practice curricula in emergency care of members of the research team (GS, RC, KS, MC). As part of their professional activities, they gathered a lot of anecdotal evidence about the breadth of the potential impact of the deployment of ACPs in emergency care. In addition, through their interactions with policy-makers, they also identified a need for systematically collected evidence as input into the decision-making process around the ACP role.

Extended roles for non-medical practitioners are not a novel concept.<sup>2 6</sup> There have been studies examining the effect of role substitution, where nurses take on tasks previously carried out by doctors, in particular in primary and community care.<sup>16 17</sup> However, advanced non-medical practitioners are not intended to function simply as cost-effective substitutes for doctors. This emerging role of the autonomous non-medical practitioner is a distinct concept, with strong emphasis on leadership and continuous learning.<sup>2 3</sup>

Therefore, this scoping study focuses on this population of advanced (autonomous) non-medical practitioners only, and excludes other extended non-medical roles. The population includes advanced practitioners from all non-medical backgrounds, for example, nurses, midwives and allied health professionals, with a focus on those roles at the patient interface. The context is emergency care, where many of the existing advanced non-medical practitioners are deployed, and where there is a recognised need for novel forms of service delivery.<sup>2</sup>

The concept to be studied is impact in its broadest sense. The anecdotal evidence from the UK suggests that the deployment of ACPs in emergency care might have a range of beneficial effects, including: improved patient safety; reduction in cost; improved patient experience and patient satisfaction; improved staff satisfaction; improved learning culture; reduction in unnecessary admissions to hospital. However, there might also be negative effects, such as: adverse effects on patient safety; lower acceptance among patients; diffusion of responsibility and lack of acceptance among senior doctors. In order to allow policymakers and health service organisations to evaluate these and other types of impact of ACPs in emergency care, it is important to examine the available evidence in a rigorous way, and to identify gaps and clear research needs from the scientific literature.

Therefore, this scoping study addresses the following research question: What is known from the literature about the different types of impact of the deployment of advanced (autonomous) non-medical practitioners in emergency care settings?

### Stage 2: identifying the relevant literature

The research team will develop the search strategy with input from an academic librarian (SJ) using an iterative three-step strategy.<sup>14</sup> Initial search terms are (combining population, context and concept through Boolean AND, and OR within each category, respectively): advanced clinical practice/practitioner; autonomous practitioner; emergency care; emergency department; emergency medical services; safety; quality; satisfaction; effectiveness; cost; admission rate; treatment outcome; impact. The academic librarian piloted these initial search terms on one database (MEDLINE). The articles identified in this initial search are currently reviewed for keywords, and the search terms will be refined and the search will be rerun accordingly. Once the set of search terms is stable, the full searches will be carried out on other relevant databases (MEDLINE, EMBASE, Web of Science, CINAHL, PsycINFO).

Additional papers will also be identified by going through the reference lists of articles retrieved through the systematic search, by hand-searching key journals and by contacting Health Education England and the Royal College of Emergency Medicine.

The EndNote bibliographic software package will be used to manage the records retrieved from the searches.

### Stage 3: study selection

A systematic approach to the selection of relevant studies will be adopted, and reported using the PRISMA flow chart.<sup>18</sup> Identified studies will be screened independently by two researchers based on the titles and abstracts of articles. One researcher is a medical student (HH-F), who will screen all identified studies. The other researcher will be a member of the research team, where the identified studies will be divided between different team members. The research team is multidisciplinary with expertise and experience in emergency care, advanced non-medical practice, leadership, clinical systems improvement, patient experience and patient and public involvement, systematic reviewing and qualitative research. Discrepancies in the screening results will be resolved through discussion and consensus. The search strategy will be modified iteratively as appropriate during this initial screening process. Subsequently, potentially relevant papers will be screened based on the full text (again by two researchers).

We will include any papers meeting all of the following inclusion criteria: (1) their focus is advanced (autonomous) non-medical practitioners (Population), (2) their primary setting is emergency care (Context) and (3) they include discussion of aspects of the impact of the deployment of advanced non-medical practitioners (Concept). All types of study design will be included. Papers that will be excluded are those that focus on medics or on extended roles that are not advanced (autonomous); or that describe studies in domains other than emergency care; or that do not address an aspect of impact of deployment of the role; or that are published in languages other than English.

### Stage 4: charting the data

Charting the data is a technique for synthesising qualitative data, which is in principle similar to the data abstraction stage when undertaking a systematic review.<sup>15</sup> A draft data abstraction form will be developed, which might include the following data items: (1) authors, (2) year of publication, (3) country of origin, (4) aims/objectives, (5) study population and sample size, (6) definition/remit of non-medical practitioner, (7) study type/methodology, (8) level of evidence, (9) type of impact considered and (10) key findings. This data abstraction form will be trialled on a small number (about 5) of included papers, and it will be refined accordingly. Then, all included papers will be charted using the revised data abstraction form. In line with the iterative scoping study methodology, the data abstraction form will be revised further as the reviewing proceeds, if required.<sup>13 15</sup> Appraisal of the quality of individual studies does not normally form part of scoping studies. Without excluding studies, it might still be useful to provide an overview of the types of evidence that is available. To this end, each study will be assigned a level of evidence according to the Oxford Centre for Evidence-Based Medicine classification. Studies at the

higher levels of evidence (levels 1a, 1b, 1c, 2a, 2b and 2c) will additionally be appraised for their quality.

### Stage 5: collating, summarising and reporting

Scoping studies aim to present an overview of all of the material reviewed, rather than to appraise the quality of the evidence and aggregate or weigh the data.<sup>15</sup> Two strategies for analysing and reporting the results will be adopted:<sup>15</sup> (1) a basic numerical analysis of the extent, nature and distribution of studies (eg, overall number of studies, country of origin, type of research design); and (2) a thematic mapping of the literature. The thematic mapping aims to cluster papers around the different types of impact that have been studied, but could also identify additional themes that might relate to, for example, the specific mechanisms that might have brought about different types of impact, or the contextual requirements and preconditions.<sup>19 20</sup>

### DISSEMINATION

The research protocol presented in this paper sets out a scoping study that aims to examine and map the literature on the impact of the deployment of advanced (autonomous) non-medical practitioners in emergency care. A scoping study was chosen in order to allow for the inclusion of a wider range of studies that address impact in a broad sense.

Advanced non-medical practitioners could make a significant contribution to the delivery of new service models. Therefore, we anticipate that the findings on the state of knowledge around the impact of advanced non-medical practitioners in emergency care will be of immediate relevance to bodies such as Health Education England, NHS Improvement and the Royal College of Emergency Medicine in the UK, and other similar organisations internationally. Members of the research team (MC, RC, GS) have well-established links to these organisations, and are well placed to feed back the findings.

The findings should be of interest to practitioners, policymakers and health service researchers. By rigorously identifying gaps in the extant research literature, we anticipate that the study will generate recommendations for informing future high-quality research studies about the impact of advanced non-medical practitioners both in emergency care, and maybe serve to advance work in other settings also. We expect that in this way this scoping study will contribute to the further development and evaluation of advanced (autonomous) non-medical practitioner roles. The research findings will be submitted for publication to relevant peer-reviewed journals as well as professional magazines.

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**Contributors** MS contributed to the development of the project idea, the development of the preliminary search strategy and the drafting of the first version of the study protocol. HH-F contributed to the development of the preliminary search strategy, and the drafting of the first version of the study protocol. GS contributed to the development of the project idea, and reviewed the preliminary search strategy. KS reviewed the preliminary search strategy. CP contributed to the development of the project idea, and reviewed the preliminary search strategy. RC contributed to the development of the project idea, and reviewed the preliminary search strategy. SS reviewed the preliminary search strategy. EM reviewed the preliminary search strategy. HH contributed to the development of the preliminary search strategy. MC contributed to the development of the project idea, and reviewed the preliminary search strategy. All authors reviewed and critiqued the draft protocol and contributed to subsequent versions. All authors approved the final version of the study protocol.

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**Competing interests** GS has been involved in setting up and promoting advanced clinical practice programmes in the UK and internationally, and has advised Health Education England on the topic. RC is the Health Education England/Royal College of Emergency Medicine Advanced Clinical Practitioner in Emergency Care curriculum development group chair. He is also the academic representative on the NHS Improvement Urgent and Emergency Care Safe Staffing Group.

**Ethics approval** The scoping study uses only previously published material, and therefore does not require ethical review.

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